ABSTRACT

[0062] An imager device that has an isolation structure such that pinned photodiode characteristics are maintained without increasing doping levels. The invention provides an isolation structure to maintain pinned photodiode characteristics without increasing doping levels around the photodiode. By creating a substrate region surrounding the charge-collection region of the photodiode, the photodiode may be electrically isolated from the bulk substrate. This region fixes the depletion region so that it does not migrate toward the surface of the substrate or the STI region. By doing so, the region prevents charge from being depleted from the substrate and the accumulation region, reducing dark current.